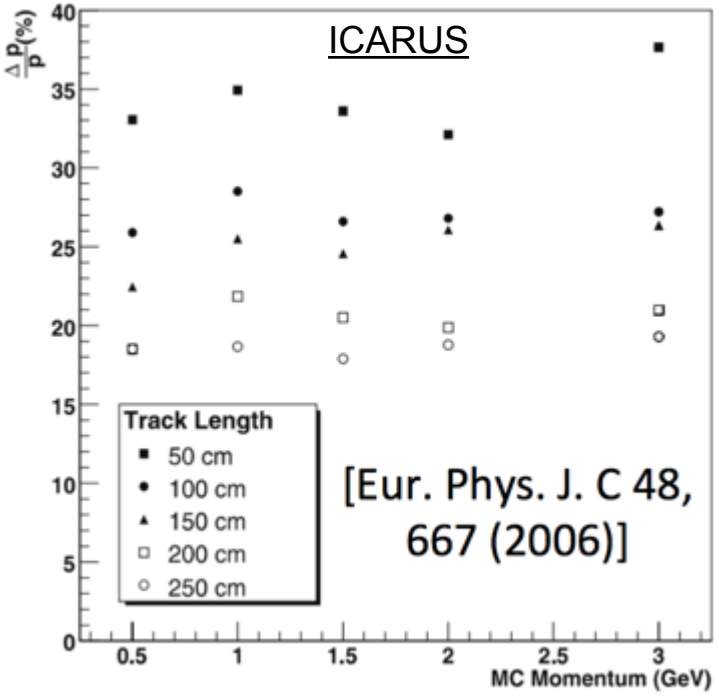
PAC slides: Muon Res

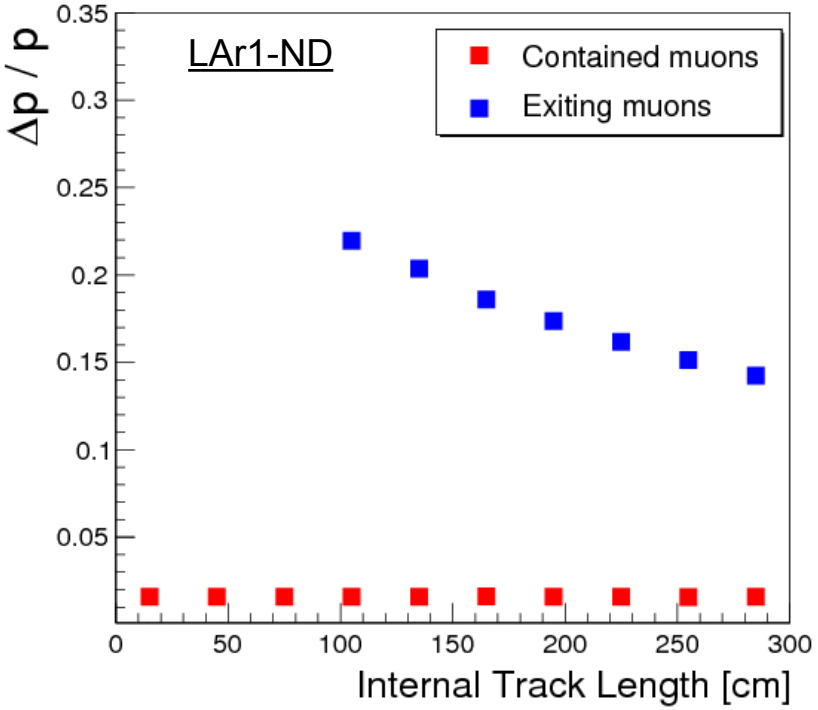
Breakdown of Muon Momentum Measurements

Of all the muon neutrino CC events

45% will stop in the LAr, $\Delta p/p = 2\%$

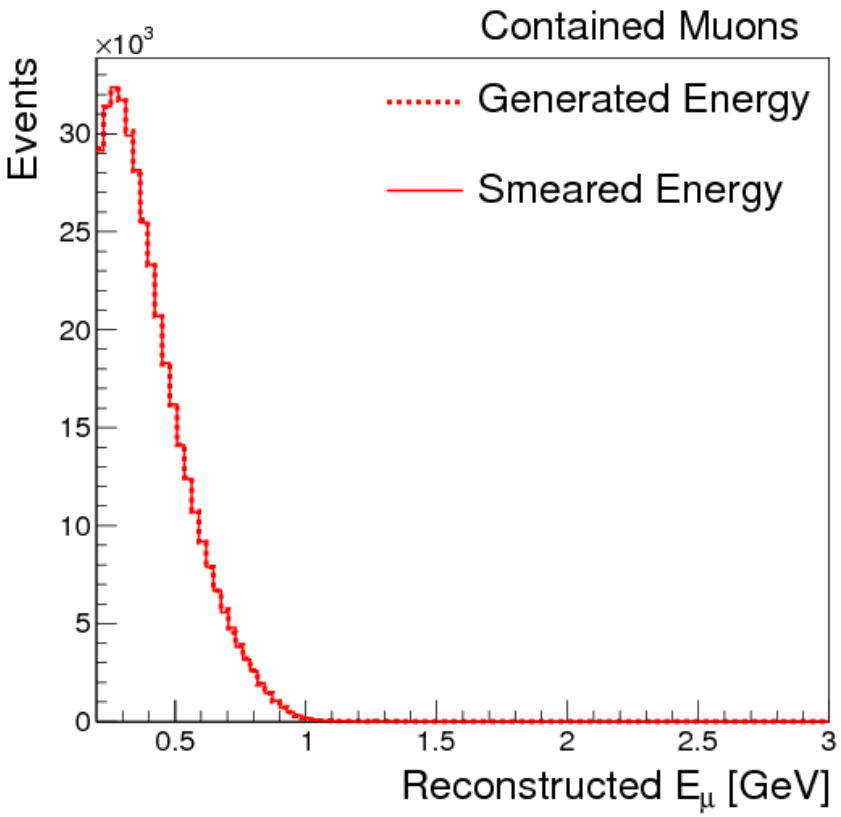
28% will exit the LAr, momentum measure via multiple scattering, using ICARUS results we estimate the resolution

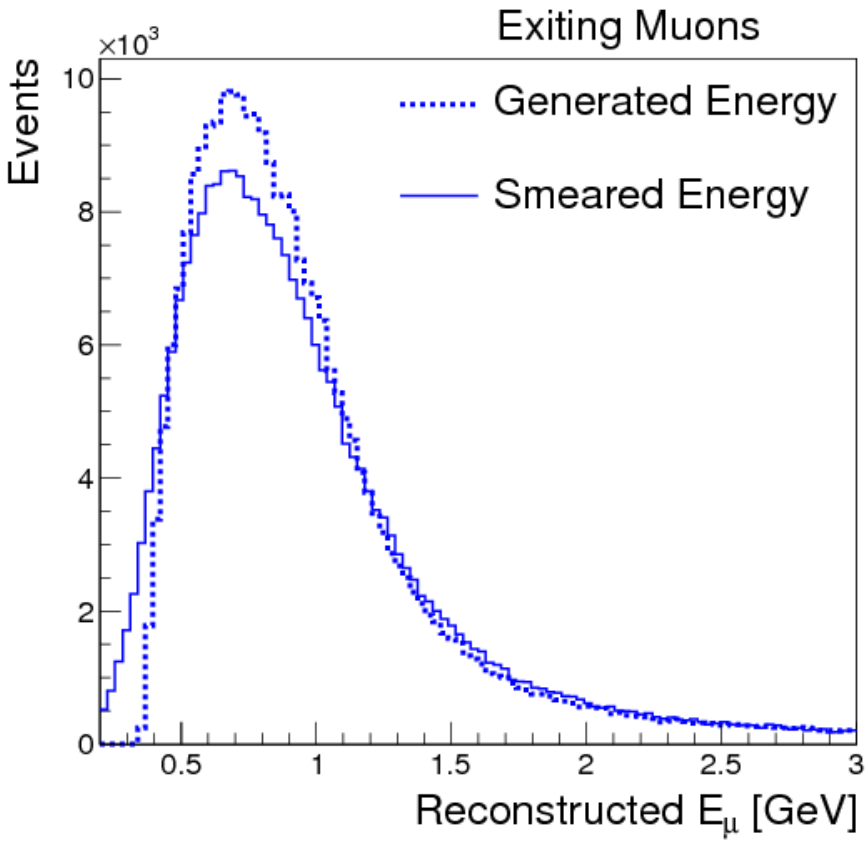




Smeared Energy Distribution

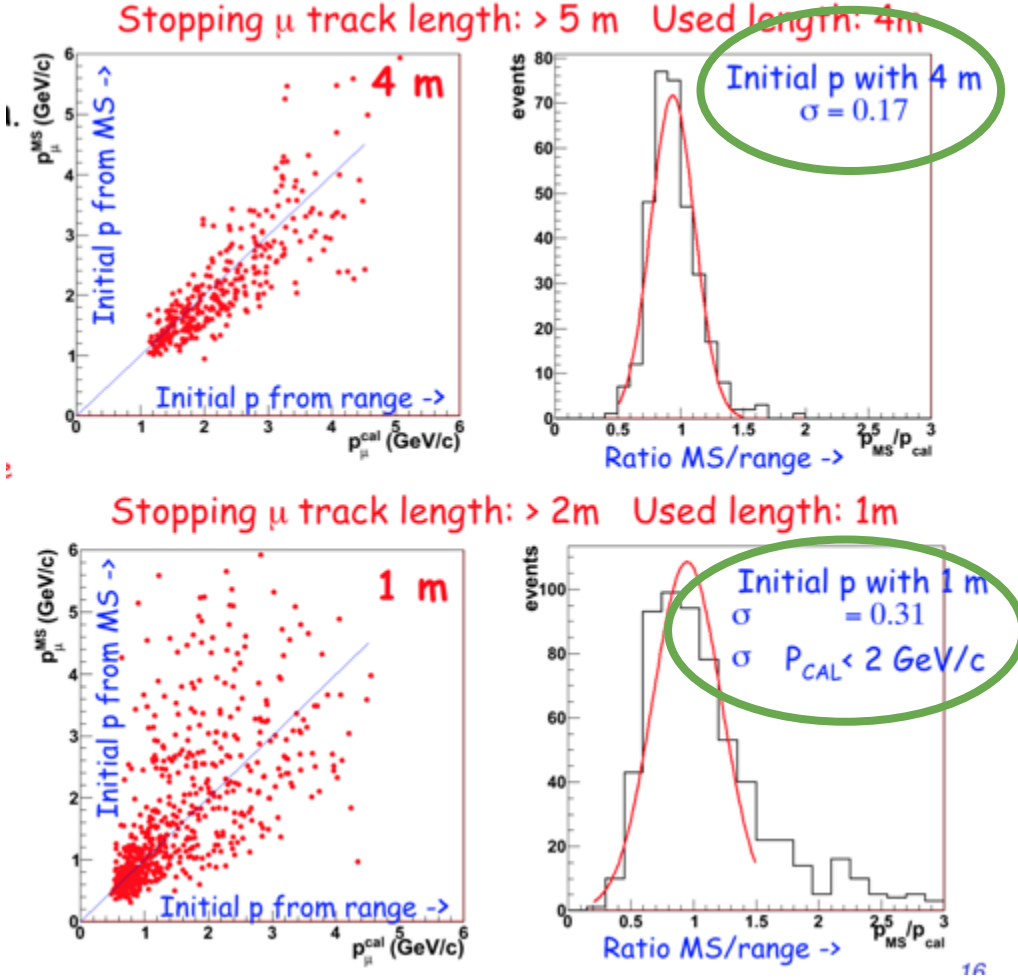
The resolutions are then used to smear the reconstructed muon energy





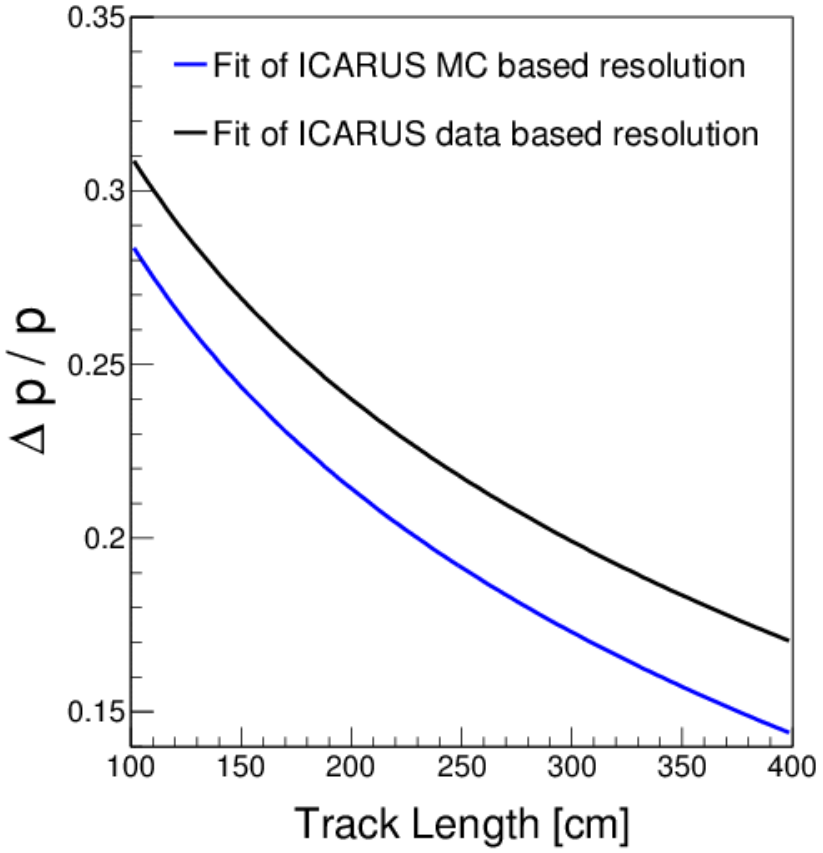
Re-evaluating Multiple Scattering Resolution

Recent ICARUS results show that the resolution of the momentum measurement based on multiple scattering was underestimated



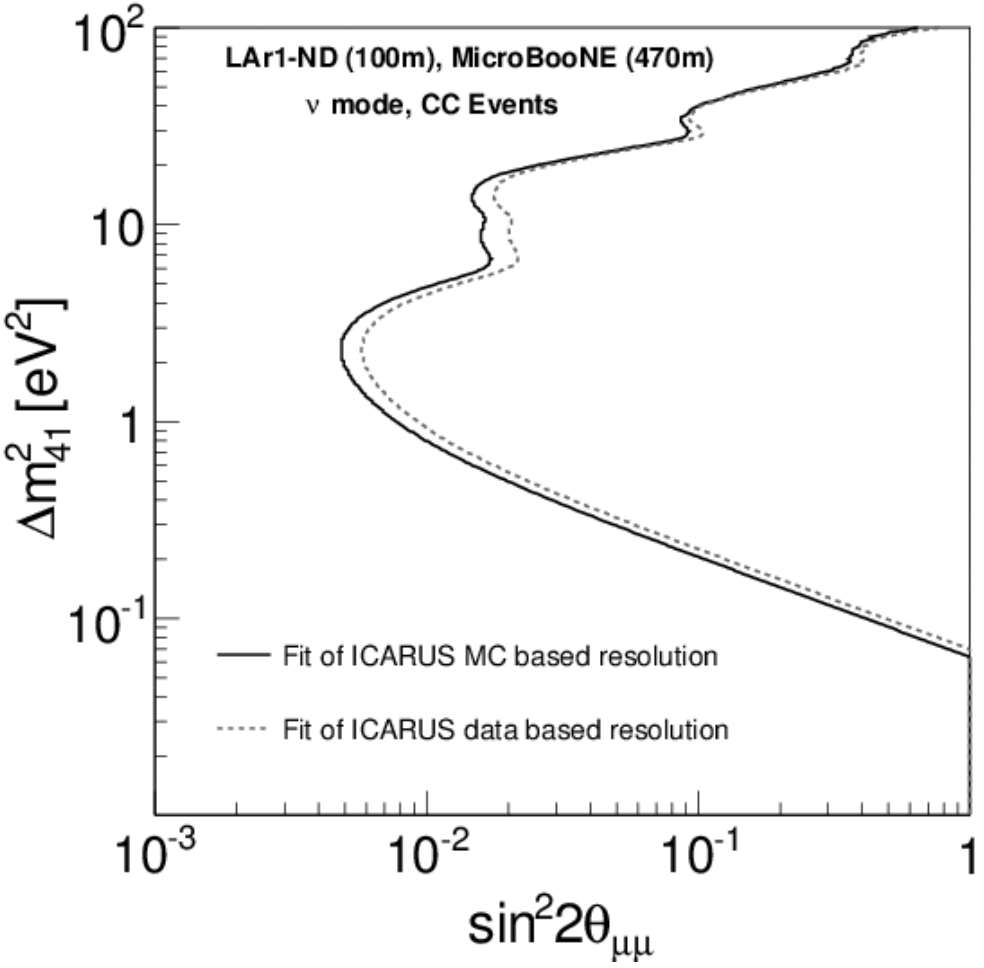
New Multiple Scattering Resolution Function

Using these new results we can adjust our resolutions and gauge the effect on the our estimated sensitivity to muon neutrino disappearance



Sensitivities: Revised Resolutions

After we smeared the muon momentum using the new resolution function we can estimate the sensitivity and find a modest reduction in the sensitivity



Removing Exiting Muons

We have also investigated the effect of excluding all the muons which are measured via multiple scattering

(Only using the 45% of muon CC events which have contained muons)